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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
MAHMOUDI, HASSAN

ART UNIT	PAPER NUMBER
2175	

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-22</u> is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-5, 7-14 and 16-22</u> is/are rejected.

7) ☒ Claim(s) <u>6 and 15</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121. DOV POPOVICI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other:

DETAILED ACTION

Specification

1. The arrangement of the disclosed application does not conform with 37 CFR 1.77(b).

Section headings should not be <u>underlined</u> and/or **boldfaced**. All section headings of the

disclosed specification are boldfaced. Appropriate corrections are required according to the

guidelines provided below:

2. The following guidelines illustrate the preferred layout for the specification of a utility

application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include
the following sections in order. Each of the lettered items should appear in upper case, without
underlining or bold type, as a section heading. If no text follows the section heading, the phrase
"Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
    DEVELOPMENT.
(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A
    COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program
    listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables
    having more than 50 pages of text are permitted to be submitted on compact
    discs.) or
    REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).
    "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
(e) BACKGROUND OF THE INVENTION.
    (1) Field of the Invention.

         (2) Description of Related Art including information disclosed under 37 CFR 1.97
           and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence
     Listing" is required on paper if the application discloses a nucleotide or amino
     acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence
     Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United
> States before the invention thereof by the applicant for patent, or on an international application by another who
> has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention
> thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999
(AIPA) and the Intellectual Property and High Technology Technical Amendments Act of
2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an
international application filed before November 29, 2000. Therefore, the prior art date of the
reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-
AIPA 35 U.S.C. 102(e)).

4. Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by <u>Ripley</u> (U.S. Publication

No. 2002/0023097 A1.)

As to claim 9, <u>Ripley</u> teaches a computer-implemented method for generating a mapping from a source schema to a target schema (see Abstract), comprising:

generating a mapping based on at least a subset of value correspondences each value correspondence representing a function for deriving a value of a target attribute from one or more values of source attributes (see paragraphs 19, 24, and 80-81);

allowing a user, in a user interaction, to incrementally add or delete a value correspondence from the subset (see paragraphs 24 and 57);

based on the user interaction, generating a new mapping (see paragraphs 57 and 80);

presenting a representation of the new mapping to the user such that the user can view the representation (see paragraphs 19, 90, and 107); and

permitting the user to add or delete a value correspondence embodied in the new mapping to generate another mapping (see paragraphs 57, 80, and 85.)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1-5, 7-8, 10-14 and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Ripley (U.S. Publication No. 2002/0023097 A1) in view of Morgenstern (U.S. Patent

No. 5,970,490.)

As to claim 1, Ripley teaches a computer system (see Abstract), comprising:

a general purpose computer (see paragraph 23), the computer including logic for

undertaking method (see paragraph 22, where "logic for undertaking method" is read on

"software program") acts to map data arranged in a source schema into a target schema (see

figure 7D, and see paragraph 84), the method acts undertaken by the logic including:

receiving at least one value correspondence, each value correspondence representing a

function for deriving a value of a target attribute from one or more values of source attributes

(see paragraph 16);

grouping at least some value correspondences into potential sets (see paragraph 72, and

see page 10, claim 5);

selecting candidate sets from at least some potential sets (see paragraphs 80-81);

grouping at least some candidate sets into covers (see paragraphs 73-76); and

using at least one cover, representing a source schema-to-target schema mapping (see

paragraph 23, and see paragraph 84.)

Ripley does not teach generating at least one query.

Morgenstern teaches an integration platform for heterogeneous databases (see Abstract),

in which he teaches generating at least one query (see column 13, lines 39-45, and see

column 28, lines 24-39.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified <u>Ripley</u> to include generating at least one query.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified <u>Ripley</u> by the teaching of <u>Morgenstern</u>, because generating at least one query would enable the system to identify the data to be moved from the source database to the target database.

As to claims 2 and 11, <u>Ripley</u> as modified teaches wherein the method acts undertaken by the logic to execute the grouping act include:

grouping value correspondences into potential sets such that, for each potential set, at most one value correspondence per target attribute exists (see <u>Ripley</u>, paragraphs 21 and 96.)

As to claims 3 and 12, <u>Ripley</u> as modified teaches wherein the method acts undertaken by the logic further include:

adding a potential set to a set of candidate sets if only one source relation is used to compute mappings using the potential set (see <u>Ripley</u>, paragraph 46); otherwise

adding a potential set to the set of candidate sets only if a join path for the source relations can be identified (see <u>Ripley</u>, paragraph 82.)

As to claims 4 and 13, <u>Ripley</u> as modified teaches wherein the method acts undertaken by the logic further include:

arranging candidate sets into groups (see <u>Ripley</u>, paragraph 72, and see page 10, claim 5) such that each group includes every value correspondence at least once, the groups establishing covers (see <u>Ripley</u>, paragraphs 73-76)

As to claims 5 and 14, <u>Ripley</u> as modified teaches wherein the method acts undertaken by the logic further include:

establishing at least one selected cover (see <u>Ripley</u>, paragraph 14);

for each candidate set in the selected cover, creating at least one query (see <u>Morgenstern</u>, column 13, lines 39-45, and see column 28, lines 24-39); and

combining the queries for the cover (see <u>Morgenstern</u>, column 28, lines 26-29.)

As to claims 7 and 16, <u>Ripley</u> as modified teaches wherein the logic undertakes the act of adding a potential set to the set of candidate sets only if a join path for the source relations can be identified using a spanning tree (see <u>Ripley</u>, paragraphs 46 and 82.)

As to claim 8, <u>Ripley</u> as modified teaches wherein the logic incrementally undertakes the acts of grouping value correspondences into potential sets (see <u>Ripley</u>, paragraphs 21 and 96), selecting candidate sets (see <u>Ripley</u>, paragraph 14), grouping candidate sets into covers (see <u>Ripley</u>, paragraphs 73-76), and generating queries representing mappings (see <u>Morgenstern</u>, column 28, lines 26-29.)

As to claim 10, Ripley teaches wherein the generating act includes:

grouping at least some value correspondences into potential sets (see paragraph 72, and

see page 10, claim 5);

selecting candidate sets from at least some potential sets (see paragraphs 80-81);

grouping at least some candidate sets into covers (see paragraphs 73-76); and

using at least one cover, representing a source schema-to-target schema mapping (see

paragraph 23, and see paragraph 84.)

Ripley does not teach generating at least one query.

Morgenstern teaches an integration platform for heterogeneous databases (see Abstract),

in which he teaches generating at least one query (see column 13, lines 39-45, and see

column 28, lines 24-39.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was made to have modified Ripley to include generating at least one

query.

It would have been obvious to a person having ordinary skill in the art at the time the

invention was made to have modified Ripley by the teaching of Morgenstern, because

generating at least one query would enable the system to identify the data to be moved from

the source database to the target database.

As to claim 17, Ripley teaches computer program device (see Abstract, and see paragraph

22) comprising:

a computer program storage device readable by a digital processing apparatus (see

paragraph 125); and

a program on the program storage device and including instructions executable by the

digital processing apparatus (see paragraph 125, where "instructions" is read on "software")

for performing method acts for representing a source schema-to-target schema mapping, the

program comprising (see paragraph 86):

computer readable code means (see paragraphs 22 and 124.)

For the remaining steps of this claim, the candidate is kindly directed to remarks and

discussions made in claims 1 and 9 above.

Ripley does not teach generating a query.

Morgenstern teaches an integration platform for heterogeneous databases (see Abstract),

in which he teaches generating a query (see column 13, lines 39-45, and see column 28, lines

24-39.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was made to have modified Ripley to include generating a query.

It would have been obvious to a person having ordinary skill in the art at the time the

invention was made to have modified Ripley by the teaching of Morgenstern, because

generating a query would enable the system to identify the data to be moved from the source

database to the target database.

As to claim 18, Ripley as modified teaches the program product further comprising

computer readable code means for sorting the subsets (see Ripley, paragraphs 55 and 74) and

displaying at least portions of a sorted list of subsets (see <u>Ripley</u>, paragraphs 19, 90, and

107), such that a user can establish a selected subset used (see <u>Ripley</u>, paragraphs 57, 80, and

85) to generate the query (see <u>Morgenstern</u>, column 13, lines 39-45, and see column 28, lines

24-39.)

As to claim 19, <u>Ripley</u> as modified teaches wherein the means for generating subsets

generates candidate sets (see <u>Ripley</u>, paragraph 68), each subset including one or more

candidate sets and the means for sorting sorts the subsets by inverse number of candidate sets

(see <u>Ripley</u>, paragraphs 55 and 74.)

As to claim 20, <u>Ripley</u> as modified teaches, wherein the means for sorting also sorts the

subsets by the number of value correspondences in the subsets (see <u>Ripley</u>, paragraphs 55

and 74.)

As to claim 21, <u>Ripley</u> as modified teaches wherein the means for generating a query

creates at least one query for each candidate set in the selected subset (see <u>Morgenstern</u>,

column 13, lines 39-45), and then combines the queries for the subset (see <u>Morgenstern</u>,

column 28, lines 26-29.)

As to claim 22, <u>Ripley</u> as modified teaches wherein the means for generating subsets and

the means for generating a query (see <u>Morgenstern</u>, column 13, lines 39-45, and see column

28, lines 24-39) are incrementally invoked by a user to selectively add or delete value

correspondences from a selected subset (see Ripley, paragraphs 24, 57, 80, and 85.)

Allowable Subject Matter

7. Claims 6 and 15 are objected to as being dependent upon a rejected base claim, but would be

allowable if rewritten in independent form including all of the limitations of the base claim

and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, Ripley (U.S. Publication No. 2002/0023097) and Morgenstern

(U.S. Patent No. 5,970,490), do not disclose, teach, or suggest the claimed limitations of (in

combination with all other features in the claim):

wherein the method acts undertaken by the logic to establish at least one selected cover

include:

ranking the covers by at least one of: a number of candidate sets in each cover, and a

number of target attributes; and

presenting ranked covers to a user for selection of one of the covers as the selected cover,

as claimed in claim 6.

The prior art of record, Ripley (U.S. Publication No. 2002/0023097) and Morgenstern

(U.S. Patent No. 5,970,490), do not disclose, teach, or suggest the claimed limitations of (in

combination with all other features in the claim):

the method further comprising:

ranking the covers by at least one of: a number of candidate sets in each cover, and a

number of target attributes; and

presenting ranked covers to a user for selection of one of the covers as the selected cover,

as claimed in claim 15.

Conclusion

9. Any inquiries concerning this communication or earlier communications from the examiner

should be directed to Tony Mahmoudi whose telephone number is (703) 305-4887. The

examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Dov Popovici, can be reached at (703) 305-3830.

tm

November 17, 2003

DOV POPOVICI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100